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SeaChoice rejects ranking of B.C. farmed salmon as "good alternative"

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VANCOUVER — U.S.-based Seafood Watch's ranking of B.C. open-net-pen farmed salmon as a "good alternative" seafood choice is problematic, according to SeaChoice, Canada's sustainable seafood watchdog.

Seafood Watch's shift in ranking from Red (avoid) to Yellow (good alternative) results from an improved score for the assessment criterion that measures whether disease transmission from farmed salmon to wild fish has population-level impacts on wild salmon.

"We disagree with the conclusion that disease and sea lice from B.C.'s farmed salmon have no population-level impact on wild salmon," said Karen Wristen, SeaChoice steering committee member from Living Oceans Society. "We don't see conclusive scientific evidence in the report to justify the ranking change. Peer-reviewed science indicates significant concerns remain in this respect."

"We know salmon farms can elevate sea lice numbers. That can affect wild salmon populations," said Martin Krkosek, a professor and Canada research chair at the University of Toronto. "For example, warm conditions and poor timing for treating outbreaks likely caused high sea lice numbers in the Broughton Archipelago in 2015. Our analysis indicated that outbreak resulted in a 23 per cent loss of pink salmon in the area."

The Seafood Watch assessment also failed to take a precautionary approach, despite methodology that requires it. SeaChoice acknowledges that gaps remain in understanding disease interactions between farmed and wild salmon, and attributes those in large part to a lack of publicly available disease data from salmon farm operations.

"Our organizations have called for data transparency from industry, especially on fish health, for more than a decade, yet much of the data related to disease and lice outbreaks and management remain unavailable," said Scott Wallace, SeaChoice steering committee member from David Suzuki Foundation. "This should be a minimum requirement for the industry to operate in Canadian public waters."

Uncertainty surrounding the health of many wild salmon stocks compounds the difficulty in determining population impacts. A recent study found Fisheries and Oceans Canada's wild salmon monitoring to be woefully insufficient and the conservation health of around half of B.C.'s wild salmon populations to be unknown.

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Seafood Watch uses a traffic light ranking system for seafood (Green is considered “best choice, Yellow is a “good alternative” and Red means “avoid”). A yellow ranking should not be equated with sustainability, but rather indicates that concerns remain with the farming practices. The assessment received a score of 4.28 out of 10.

“The problem is that yellow-ranked seafood is widely viewed as a sustainable choice when often significant environmental concerns remain,” said Kelly Roebuck, SeaChoice representative from Living Oceans Society. “Salmon farmed in open-net pens won’t be a sustainable option until operations change, transparency improves and broad scientific consensus concludes that wild salmon populations aren’t negatively affected. In the meantime, we recommend that consumers support more sustainable practices and technologies such as land-based closed containment farmed salmon”. The Ocean Wise Seafood Program, one of Canada's prominent seafood ranking organizations, continues to not recommend B.C. open-net-pen farmed salmon.

SeaChoice is calling on the federal government to improve salmon farming data transparency, and to enhance disease research and monitoring to ensure sustainability of wild salmon stocks that interact with open-net salmon farms. SeaChoice is also asking the Canadian government to respect the Cohen Commission recommendation that salmon farms should be removed from wild salmon migration routes, unless it can be proven they are not contributing to the decline of wild salmon.

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SeaChoice
SeaChoice is a collaboration of three internationally recognized organizations — the David Suzuki Foundation, Ecology Action Centre and Living Oceans Society — that use their broad, national expertise to find solutions for healthy oceans. Launched in 2006, SeaChoice was created to provide informative resources on seafood sustainability at various levels of the seafood supply chain, from harvesters to consumers. After achieving significant progress in the retail landscape between 2006 and 2016, with many retail partners reaching sustainable seafood commitments, SeaChoice is working toward a new and ambitious goal of increasing sustainability throughout the entire seafood supply chain. SeaChoice is a member organization of the Conservation Alliance for Seafood Solutions, and works with consumers, retailers, suppliers, government and producers to accomplish its objectives.

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Backgrounder

The 2017 reassessment ranks B.C. farmed salmon as a "good alternative" (Yellow). Previous Seafood Watch assessments ranked B.C. farmed salmon as "avoid" (Red). The last assessment was in March 2014. It concluded, "the overuse of chemicals and the potential impacts of disease on wild populations are serious concerns." Today, even more chemicals are being used to raise farmed salmon than in 2014, and potential impacts of disease on wild salmon have not been ruled out. In fact, a deadly disease linked to a new virus has recently been diagnosed in B.C. farmed salmon[i] and the implications of its spread to wild fish have yet to be determined. Judging from the effect of the disease on farmed fish (weakened hearts and muscle deterioration), the consequences may be severe. Wild salmon need to be strong and healthy to migrate up rivers to spawn.

What does this mean for consumers?

B.C. farmed salmon is not recommended in Canada
Canada's only seafood ranking body, Ocean Wise, does not recommend B.C. open-net farmed salmon. Although Ocean Wise uses Seafood Watch assessments to determine its recommendations, the B.C. farmed salmon assessment's overall score of 4.28 does not meet the Ocean Wise threshold score of 5.5. Atlantic Canada farmed salmon is also not recommended.

Yellow does not mean "go" or "sustainable"
Seafood Watch uses a "traffic light" ranking system (Green – best choice; Yellow – good alternative; Red – avoid).

Seafood Watch defines Yellow or good alternative as: "Buy, but be aware there are concerns with how they're caught or farmed." In other words, Yellow means some concerns remain with the farming practices used to raise these fish and is not interchangeable with "sustainable". Unfortunately, a fundamental challenge in the marketplace is the lumping of Green- *and* Yellow-ranked products as "sustainable" options. Instead, Yellow should be considered "proceed with caution".

What caused the ranking to change?

A score shift under the disease criterion of the Seafood Watch assessment from a previously deemed *Moderate-High* concern (score of 2 or Red) to a *Moderate* concern (score of 4 or Yellow) caused the overall assessment rank to change from "avoid" (Red) to "good alternative" (Yellow). Had the disease score been just one point less (i.e., a score of 3), the

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final ranking would have been Red. Furthermore, the overall industry score did not improve. The final score in 2014 was 4.3 out of 10; while the 2017 re-assessment score is 4.28.

Why does SeaChoice disagree with the change?

SeaChoice believes the Seafood Watch methodology was not applied appropriately for the disease criterion and so the product does not deserve a Yellow rank. Our reasoning is as follows:

1) Disease impact on wild populations remains a serious concern.

The Seafood Watch disease criterion assesses two disease classifications: pathogenic (viral and bacterial) and parasitic (sea lice). Under the Seafood Watch methodology, disease interaction risk between farmed and wild fish is assigned a score from 0 (high/critical concern) to 10 (no concern).

A disease score of 4 under this methodology equates to: "Pathogens or parasites cause morbidity or mortality in wild species but have no population impact."

SeaChoice disagrees with this conclusion. Definitive evidence does not rule out population impacts on wild salmon populations by pathogens and parasites (sea lice) from open-net salmon farms. Peer-reviewed science published between the 2014 and 2017 Seafood Watch assessments indicates significant concerns remain in this respect. For example:

- Piscine reovirus (PRV) and heart and skeletal muscle inflammation (HSMI): A recent Strategic Salmon Health Initiative paper[ii] confirmed that HSMI occurs in B.C. and appears correlated with PRV. PRV has been found in B.C. wild salmon, and further study is required to establish the role salmon farming plays as a potential PRV/HSMI conduit to wild salmon.
- Sea lice: Recent studies have found the vulnerability of wild salmon populations due to lice loads elevated by farms with ineffective sea lice management remains a serious concern. Analyses based on 15 years of field work estimated a 23 per cent loss to the Broughton Archipelago pink salmon population due to 2015 high *L. salmonis* lice loads. (The mortality estimate falls within the range nine to 39 per cent with 95 per cent confidence.)[iii] The study highlighted warmer sea conditions, inadequacies in coordination, absence of proactive treatments and a lack of an area-based management scheme contributed to the high lice loads. Meanwhile, other studies suggested the indirect mortality impact on Fraser River sockeye by the sea louse *Caligus clemensi* to be significant (i.e., mortality as a result of reduced growth rate and poor feeding versus direct mortality from the louse itself). Current sea lice management does not require industry to manage *Caligus* numbers on farmed salmon.[iv,v]

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2) Further study is needed to fill data and knowledge gaps.

The above examples demonstrate that population impacts on wild salmon from salmon farms cannot be ruled out, and that we need to greatly improve our understanding of disease impacts from open-net salmon farms on wild populations. Understanding the extent of virus transmission between farmed and wild fish, and the degree of impact of any viral transmissions (i.e., whether or not population-level impacts may be occurring) are acknowledged scientific gaps across major salmon-farming regions (e.g., B.C., Norway).[vi]

The $37 million *Cohen commission inquiry into the decline of Fraser River sockeye salmon*[vii] highlighted uncertainty surrounding the disease risks farmed salmon poses to wild salmon. This uncertainty prompted Justice Cohen to recommend a 2020 deadline for Fisheries and Oceans Canada to conduct research, analyses and assessments of disease interaction and impacts between farmed and wild salmon. Following the research, DFO should remove salmon farms in the Discovery Islands if salmon farms are found to pose more than a minimal risk of serious harm.

Research currently underway by the Strategic Salmon Health Initiative will help provide answers to data and knowledge gaps. The project's intent is to identify the presence (or not) of microbes in Pacific salmon that could reduce their productivity. The research promises the first possibility to assess whether or not population-level impacts could be occurring from HSMI/PRV and other viral diseases.

Nevertheless, filling these gaps is a huge challenge in wild systems, as detection of farm-originated diseases in wild fish is confounded by the death of infected fish. That is, for farm-related pathogens to be ruled out as a cause of wild fish mortality, sampling of infected wild fish must occur before the fish die or get eaten by predators.

In addition, a recent study found DFO's wild salmon monitoring to be at an all-time low and the conservation health status for around half of B.C. wild salmon populations unknown.[viii] Such fundamental data are needed to inform whether population impacts are occurring.

3) The precautionary principle should have been applied.

The Seafood Watch methodology calls on the precautionary principle where there is a lack of information and absence of data:

*"Seafood Watch's use of the Precautionary Principle when there is potential for a significant impact, but information is not available. *Note: The absence of data showing impact does not equate to no impact. (i.e., "No evidence of impact" is not the same as "Evidence of no impact.")"*[ix]

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SeaChoice believes that the uncertainty surrounding population impacts on wild fish from pathogens and parasites originating from salmon aquaculture and the lack of definitive evidence to absolve the industry means the precautionary principle should have been applied in the 2017 Seafood Watch assessment. Unfortunately, the assessment unequivocally failed to evoke the precautionary principle for the disease criterion score.

4) Transparency and public access to fish health data remains a concern.

Publicly available information on farmed fish health remains limited and highly aggregated on DFO's website. This despite the DFO minister's mandate letter stated as "committed to set a higher bar for openness and transparency in government"; the DFO Senate standing committee's report on aquaculture to ensure public reporting "pertaining to the license and compliance of each aquaculture operator"; and the Cohen Commission recommendation to allow independent scientists access to fish health farm data.

Fish health data should regularly be made transparent and publicly available for stakeholders, including monthly raw fish health data from individual farms, as well as the diagnosis and treatment(s) of fish pathogens and parasites (e.g., substance, quantity, date). Reporting such data is part the industry's license conditions but it is reported to government only. The public has no right to know what is really happening on farms.

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